

REMARKS:

In view of the foregoing amendments and the following remarks please reconsider the current application.

In amending the claims, one claim has been cancelled and claim has been added so that the total number of claims remains unchanged. Furthermore, independent claims 1 and 20 have been amended, previously submitted dependent claim 9 has been amended in independent form and new independent claim 29 has been added in order to distinguish the present invention from the prior art. The remaining dependent claims have been amended in order to be consistent with the amendments to the independent claims noted above.

The Commissioner is hereby authorized to charge fees for the one extra independent claim {1 X \$105 = \$105} for a total of **\$105** and any additional fees which may be required, or credit any overpayment to Account No: **01-0310**.

Independent claim 1 has been amend to include the subject matter of previously submitted dependent claims 14 and 15 relating to use of a catalytic converter and the injection of additional air into the exhaust gases to maximize plant nutrients extracted from the exhaust gases. Furthermore claim 1 has been amended to emphasis an outlet pipe from the exhaust chamber to the condensing chamber which specifically conveys water vapor and exhaust gases into the condensing chamber where the gases are cooled with the water to form a condensate solution. By further directing cooled exhaust gases through the condensing chamber, the system of the present invention maximizes the beneficial plant nutrients achieved from the hot temperatures in the exhaust chamber while further benefiting from the improved absorption of nitrogen compounds into the condensate solution in the cooler temperatures of the condensing chamber separate from the exhaust chamber. Accordingly the fertilizing system according to now amended claim 1 achieves a

better extraction of plant nutrients from exhaust gases by converting more gases into a form to be more readily reacted through the catalytic converter for reaction with the additional air and water injected together in the exhaust gases in the exhaust chamber at high temperature as well as benefiting from lower temperature reactions of the exhaust gases with the water vapor and condensate solution in the condensing chamber.

The examiner's only cited reference against the current claims was US 4,247,321 by Persinger in which a method and apparatus for obtaining fertilizing solution is described. Contrary to the present invention, no catalytic converter is provided for converting exhaust gases into a form more ready to be reacted before entering the exhaust chamber with both additional air and water being injected into the exhaust gases. Furthermore Persinger discloses no similar communication between the exhaust chamber and the condensing chamber to allow exhaust gases to enter the condensing chamber and react with the water vapor and condensate solution at temperatures which are considerably lower than the reactions taking place in the exhaust chamber. Persinger instead discloses a preference for injecting ozone gas directly into the water flowing into the scrubber so that no additional air is reacted with hot temperature exhaust gases directly nor is additional air reacted with gases which have been treated through a catalytic converter to be in a more preferential form as in the present invention. More importantly all of the exhaust in Persinger is mixed with the water in a single zone within the scrubber so that no exhaust gases continue beyond the scrubber to a lower temperature zone as in the condensing chamber of the present invention. The configuration of the condensate outlet at the bottom of the scrubber ensures that only liquid and no exhaust gases are pumped by the pump 34 to the cooling tower. Furthermore at column 5, lines 45 through 48, Persinger specifically notes that the scrubber 18 is a vessel having openings through

which exhaust gases or steam may escape. Accordingly it is clearly understood that exhaust gases are not reacted initially in a high temperature exhaust chamber zone followed by a cooler condensing chamber zone as in the present invention.

As the prior art fails to disclose all of the features of now amended claim 1, it is clear that the fertilizer system of claim 1 is an improvement over the prior art. Furthermore as there are several limitations in claim 1 which are not seen or shown in any of the prior art references considered alone or in combination, it is believed that claim 1 should now be in condition for allowance.

Previously submitted claim 9 has been amended in independent form along with some additional limitations with regard to the connection of the irrigation pump to provide further emphasis that the present invention relates to a high pressure system. In the high pressure system of the present invention, the water to be injected in the exhaust chamber is extracted from a high pressure flow and the condensate solution is returned to a low pressure zone in the irrigation water contrary to any prior art configuration so that only a single pump is required in the present invention as opposed to multiple pumps being required for proper operation in the prior art.

The examiner's only cited reference to Persinger discloses no similar configuration of diverting flow from an irrigation pump through a fertilizing system to be returned to the inlet side of the irrigation pump without any auxiliary pump being required. In particular none of the prior art references disclose a high pressure irrigation system in which the outlet pump pressure is sufficient to provide the water injection pressure into the exhaust chamber to subsequently form a condensate solution and in which the suction from the inlet side of the pump is sufficient to draw the condensate solution into the flow of irrigation water.

As the configuration of the present invention requires fewer mechanical components for decreased operating costs and maintenance as compared to any

prior art configuration due to the inlet structure disclosed in claim 9, it is believed that independent claim 9 should now also be in condition for allowance.

Independent claim 20 has been amended to provide further emphasis on the distinguishing features of the present invention compared to the prior art cited by the examiner in noting that water vapor is formed in the exhaust chamber and that the water vapor and exhaust gases are directed together from the exhaust chamber to the condensing chamber. More particularly Claim 20 notes that the water forms a water vapor prior to exiting the exhaust chamber. In this configuration the exhaust chamber comprises a hot temperature zone where plant nutrients formed under hotter temperatures react with the steam whereas the benefits of lower temperatures for absorption of other beneficial compounds is achieved in the cooler condensing zone. The formation of steam or water vapor in the exhaust chamber is important for reacting with the walls of the exhaust chamber to produce various metal oxides that are beneficial to plants. These additional plant nutrients can only be achieved when sufficiently high temperatures are present in the exhaust chamber that the water exits the chamber in the form of a vapor with the exhaust gases.

The examiner's only cited reference to Persinger is clear at column 5, lines 45 through 48 that the exhaust gases are vented through openings in the scrubber so that they cannot be directed to a subsequent cooler condensing zone with water vapor as in the present invention. Furthermore the configuration of the scrubber in which condensate solution exits from the bottom as in Persinger would not permit exhaust gases to be collected from the scrubber together with water vapor, nor would sufficiently elevated temperatures be present for steam to react with the walls of the chamber to form various metal oxides. . Accordingly many desirable plant nutrients are collected in the present invention as compared to Persinger who instead

permits many potentially beneficial compounds and nutrients to be exhausted from the scrubber.

As none of the examiner's cited references disclose a similar configuration of water vapor and exhaust gases being first mixed in a first exhaust chamber and then being directed together to a separate condensing chamber as a vapor, it is believed that claim 20 should now also be in condition for allowance.

New independent claim 29 has been added to better define the plant care equipment previously objected to by the examiner in claims 7 and 26. More particularly, claim 29 discloses an engine and source of water supported on wheels and which is arranged to spray the condensate solution on the ground across which the device is supported for rolling. In this manner beneficial compounds can be extracted from the engines of various mowers and agricultural sprayers and the like to take advantage of available plant nutrients and reduce potentially harmful emissions into the environment. The mobile configuration of the fertilizer system is unseen in any of the examiner's cited references and accordingly it is believed that claim 29 should now also be in condition for allowance.

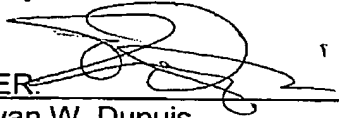
In addition to the independent claims noted above, the present invention is believed to be yet further distinguished from the prior art in the dependent claims. In particular, none of the prior art appears to disclose a similar advantageous cooling structure as disclosed in current Claim 11 in which cooling is provided by readily available irrigation water. Furthermore, none of the prior art discloses any similar controls as described in Claims 12 and 13 to ensure no air enters the pump and no condensate is permitted to flow back into the engine and damage the engine in a high pressure system.

The claims have also been amended to remove the wording to which the examiner objected to under 35 U.S.C. 112.

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Early and favorable reconsideration of this application is earnestly solicited.

Respectfully submitted  
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CERTIFICATION OF FACSIMILE TRANSMISSION

I, Ryan W. Dupuis, hereby certify that this paper is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300, on August 25, 2008

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